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10/765,061	01/28/2004	Alwin Lee	32052-8295.US	2327

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EXAMINER

RILEY, MARCUS T

ART UNIT	PAPER NUMBER
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2625

NOTIFICATION DATE	DELIVERY MODE
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06/11/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/765,061	Applicant(s) LEE ET AL.	
	Examiner MARCUS T. RILEY	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 1-4, 8-24, 30 and 33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-7, 25-29, 31, 32 & 34-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/14/2004; 07/26/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Response to Amendment

1. This office action is responsive to the applicant's remarks received on March 9, 2010.

Claims 1-39 are pending. **Claims 1-4, 8-24, 30 & 33** have been cancelled.

Response to Arguments

2. Applicant's arguments with respect to amended **claims 5, 25, 26, 31 & 32** filed on March 9, 2010 have been fully considered but they are not persuasive.

A: Applicant's Remarks

For Applicant's Remarks see "*Applicant Arguments/Remarks Made in an Amendment*" filed March 9, 2010.

A: Examiner's Response

Applicant argues that Koga '711, Kanemitsu '603 and Bearss '221 either alone or in combination fails to disclose, teach or suggest wherein if a determination that the first area includes image portion or the text portion is not made, then either marking the first area as an image area or replacing the first background color with the second background color.

Examiner understands the Applicant's arguments but respectfully disagrees. Koga '711, Kanemitsu '603 and Bearss '221 either alone or in combination discloses, teaches or suggest the Applicant's claimed invention. Koga '711 at Column 22 lines 39-42 and Fig. 5a shows if a

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determination that the first area, the Intermediate Image-Segment, includes image portion. For example, Intermediate Image-Segment shows where there is no text portion and the General Image-Segment shows how the first area is marked as an image area. A binary image is compressed by a compression method stored in the compressed-data header is registered as “image-segment shape” when the text portion is not being made. Thus, Koga ‘711, Kanemitsu ‘603 and Bearss ‘221 either alone or in combination discloses, teaches or suggest the Applicant’s claimed invention. As a result, claim 5 is not patentable over Koga ‘711, Kanemitsu ‘603 and Bearss ‘221 either alone or in combination. Accordingly, Applicant’s application is not in condition for allowance.

Claim Rejections - 35 USC § 101

(The previous claim rejection is withdrawn in light of the applicant’s amendments.)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 5-7, 25-29, 31, 32 & 34-39** are rejected under 35 U.S.C. 103(a) as being unpatentable over Koga et al. (US 6,556,711 B2, hereinafter Koga ‘711) in combination with Kanemitsu et al. (US 4,996,603, hereinafter Kanemitsu ‘603).

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Regarding claim 5; Koga '711 discloses a method performed by a device (Fig. 3, Block Diagram of an Image Processing Apparatus) having a processor (Fig. 3, CPU of the Image Processing Apparatus),

choosing a first background color (Fig. 1, #5002) from the master copy (Fig. 1, #5001, i.e. a background 5002 is extracted from an input image 5001. Column 7, lines 61-63);

wherein the master copy includes an image portion (Fig. 1, i.e. Input Image – Intermediate Image Segment 1), a text portion (Fig. 1, #5001, i.e. Character 1), and an empty portion containing neither an image nor text (i.e. Fig. 7 shows an empty portion where no background image segment found.);

condensing the master copy based at least in part on the first background color by omitting the empty portion to create a condensed copy of the master copy the condensed copy containing only the image portion and the text portion (Fig. 1, #5003, i.e. The master copy 5001 is condensed into 3 segments, #'s 5002-5004. #5003, Intermediate Image segment 2-1-1 shows where the master copy 5001 is condensed only into an image and text portions).

transversely and vertically dividing the entirety of the condensed copy into a plurality of first areas (Fig. 45, Input Image. i.e. The input image is divided into blocks 3101 of two pixels vertically and two pixels horizontally and one pixel in each block. The image is reduced by $\frac{1}{2}$ vertically and horizontally can be created. Column 34, lines 5-11);

for each of the first area choosing a second background color from the first area (i.e. There are second extraction means for extracting an image segment from the input color image using data of the image segment extracted by the first extraction means. Column 4, lines 22-25);

determining where the first area includes the image portion or the text portion based at least in part on the second background color (Fig. 1, #5005, Background Image segment 2-2. i.e. #5005 shows the image portion based at least in part on the second background color. Column 4, lines 22-25);

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if the first area includes the image portion, marking the first area as an image area (Fig. 1 #5002. i.e. A binary image is compressed by a compression method stored in the compressed-data header is registered as "image-segment shape". Column 22 lines 39-42);

if the first area includes the text portion, marking the first area as a text area (Fig. 1 #5003, i.e. Character 1 is the first text area. Column 22, lines 26-35);

if a determination that the first area (Fig. 5a., Intermediate Image-Segment) includes image portion or the text portion is not made, then either marking the first area as an image area (Fig. 5a., General Image-Segment) or replacing the first background color with the second background color (Fig. 5a. i.e. Intermediate Image-Segment shows where there is no text portion and the General Image-Segment shows how the first area is marked as an image area. A binary image is compressed by a compression method stored in the compressed-data header is registered as "image-segment shape" when the text portion is not being made. Column 22 lines 39-42);

condensing the first individual area based at least in part on the second background color (i.e. The reduced image is obtained by reducing the size of the input image in the horizontal and vertical directions. Column 33, lines 57-59);

transversely and vertically dividing the first area into a plurality of second individual areas (Fig. 45, Input Image. i.e. The input image is divided into blocks 3101 of two pixels vertically and two pixels horizontally and one pixel in each block. The image is reduced by $\frac{1}{2}$ vertically and horizontally can be created. Column 34, lines 5-11);

and for each of the second areas determining whether the second area includes the image portion or the text portion based at least in part on the second background color (Fig. 1, #5005 & 5006, Background Image segment 2-2. i.e. #5005 shows the image portion based at least in part on the second background color. The second extraction means for extracts an image segment from the input color image using data of the image segment extracted by the first extraction means. Column 4, lines 22-25);

if the second area includes an image portion, marking the second individual area as an image area (Fig. 1, #5005, Background Image segment 2-2. i.e. #5005 shows the image portion based at least in part on the second background color. Column 4, lines 22-25);

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and if the second area includes a text portion, marking the second individual area as a text area (Fig. 1, #5006, Intermediate Image segment 2-2-1. i.e. #5006 shows Character 2 based at least in part on the second background color. Column 4, lines 22-25 and see Column 22, lines 26-35).

wherein at least one first area is marked as an image area in response to the determination that the at least one first area includes the image portion or the text portion not being made (Fig. 5a. i.e. Intermediate Image-Segment shows where there is no text portion and the General Image-Segment shows how the first area is marked as an image area. A binary image is compressed by a compression method stored in the compressed-data header is registered as "image-segment shape" when the text portion is not being made. Column 22 lines 39-42);

Koga '711 does not expressly disclose processing by the device images with halftone processing, processing text with line art processing and outputting the processed images and processed text as a whole.

Kanemitsu '603 discloses processing by the device the image areas with halftone processing (Fig. 4, Half-Tone Processing Circuit #2. i.e. When the circuit 3 detects a photo portion, the half-tone signal HTS is selected. The half-tone signal HTS of FIG. 4 is selected as the half-tone image portion. Column 4, lines 36-39 and 57-58);

processing by the device the text areas with line art processing (Fig. 4, Fixed Slice Processing Circuit #3. i.e. When the circuit 3 detects a character portion, the fixed slice signal FSS is selected. column 6, lines 36-39);

outputting the processed images and processed text as a whole (Fig. 4, Selection Circuit Output #4. i.e. Reference Fig. 1 where #100 is the original image with images and characters. The original image is reproduced as a whole, #104. Column 3, lines 1-13).

Koga '711 and Kanemitsu '603 are combinable because they are from same field of endeavor of an image processing apparatus ("Image Processing System" Kanemitsu '603, see eg. Title).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the image processing apparatus as taught by Koga '711 by processing image areas with halftone processing, processing text areas with line art processing and outputting the

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processed images and processed text as a whole as taught by Kanemitsu '603. The motivation for doing so would have been because this would enable clear reproduction of an original document including mixed characters, ruled lines, and photos. Therefore, it would have been obvious to combine Koga '711 with Kanemitsu '603 to obtain the invention as specified in claim 5.

Regarding claim 6; Koga '711 as modified does not expressly disclose where said halftone processing comprises a dithering process.

Kanemitsu '603 discloses the halftone processing is a dithering process (i.e. The multi-level signal of the photo portions of the original image is binary-coded by the half-tone processing method based on dithering for binary coding the multi-level signal based on a predetermined dither pattern. Column 3, lines 19-23).

Koga '711 and Kanemitsu '603 are combinable because they are from same field of endeavor of an image processing apparatus ("Image Processing System" Kanemitsu '603, see eg. Title).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the image processing apparatus as taught by Koga '711 by making the halftone process comprise of a dithering process as taught by Kanemitsu '603. The motivation for doing so would have been because this would enable clear reproduction of an original document. Therefore, it would have been obvious to combine Koga '711 and Kanemitsu '603 to obtain the invention as specified in claim 5.

Regarding claim 25; Claims 25 & 31 contains substantially the same subject matter as claim 5. Therefore, claim 25 & 31 are rejected on the same grounds as claim 5.

Regarding claim 26; Koga '711 discloses wherein dividing the condensed document includes dividing the condensed document transversely and vertically into a plurality of

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individual areas, and the method further includes (Fig. 45, Input Image. i.e. The input image is divided into blocks 3101 of two pixels vertically and two pixels horizontally and one pixel in each block. The image is reduced by $\frac{1}{2}$ vertically and horizontally can be created. Column 34, lines 5-11):

for at least a second individual area for which the determination that the second individual area contains image or text is not made, performing an additional action includes (Fig. 5a. i.e. Intermediate Image-Segment shows where there is no text portion and the General Image-Segment shows how the first area is marked as an image area. A binary image is compressed by a compression method stored in the compressed-data header is registered as "image-segment shape" when the text portion is not being made. Column 22 lines 39-42);

omitting sub-areas in the second individual area based at least in part on the chosen area background color to create a condensed area (i.e. Fig. 7 shows where the "No Background Image Segment" is omitted. See column 33, lines 57-59 wherein Koga teaches condensing the master copy based at least in part on the first background color "Here the reduced image is obtained by reducing the size of the input image in the horizontal and vertical directions..." column 33, lines 57-59);

dividing the condensed area into a plurality of individual sub-areas (Fig. 45, Input Image. i.e. The input image is divided into blocks 3101 of two pixels vertically and two pixels horizontally and one pixel in each block. The image is reduced by $\frac{1}{2}$ vertically and horizontally can be created. Column 34, lines 5-11);

and for each of the individual sub-areas, choosing a sub-area background color based on the individual sub-area (i.e. There are second extraction means for extracting an image segment from the input color image using data of the image segment extracted by the first extraction means. Column 4, lines 22-25);

and identifying the individual sub-area as containing image or text based at least in part on the chosen sub-area background color (Fig. 1, #5005, Background Image segment 2-2. i.e. #5005 shows the image portion based at least in part on the second background color. Column 4, lines 22-25).

Regarding claim 27; Koga '711 discloses wherein identifying the individual area as containing image or text includes identifying the individual area as containing image or text

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based on bit depth distribution, the identified image area containing an image, the area background color, and the document background color, the identified text area containing text, the area background color, and the document background color (Fig. 1, i.e. Fig. 1 shows where #'s 5002-5004 shows image and the area background color, #5001 shows the document background color, #5002 shows the area background color, #'s 5003 & 5004 characters 1 & 2 shows the identified text areas containing text in #5001. See also Column 3, lines 60-67).

Regarding claim 28; Koga '711 discloses wherein choosing an area background color includes choosing an area background color that is different than the document background color (See Figure 1 wherein #5004 is the same as character 2 in #5001. Fig. 1 shows area background color that is different than the document background color. Character 2 in #5004 is different than Character 1 in #5001).

Regarding claim 29; Koga '711 discloses wherein choosing an area background color includes choosing an area background color that is the same as the document background color (See Figure 1 wherein Fig. 1 shows an area background color that is the same as the document background color. Character 2 in #5004 is the same as Character 2 in #5001).

Regarding claim 32; Koga '711 discloses wherein dividing the condensed document includes dividing the condensed document transversely or vertically into the first area, the second area, and the third image area ("The input image is divided into blocks 3101 of two pixels vertically and two pixels horizontally (for a total of four pixels) shown in FIG. 45, and one pixel in each block (say a pixel 3102 in the upper left-hand corner) is made one corresponding pixel 3103 of the reduced image, whereby an image reduced by $\frac{1}{2}$ vertically and horizontally can be created." column 34, lines 5-11).

Regarding claim 34; Koga '711 discloses wherein outputting the processed images and processed text as a whole includes faxing the processed images and processed text (i.e. The image processing apparatus and method described in Figs.1 & Step 5 of Fig. 2 can be output in a color facsimile. Column 8, lines 23-33).

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Regarding claim 35; Koga '711 discloses copying the master copy (Fig. 3, Color Input Image 1001, i.e. Color image input unit 1001 may be an input unit for reading in an image by a color image scanner. Column 3, lines 18-24).

Regarding claims 36 & 38; Claims 36 & 38 contains substantially the same subject matter as claim 34. Therefore, claims 36 & 38 are rejected on the same grounds as claim 34.

Regarding claims 37 & 39; Claims 37 & 39 contains substantially the same subject matter as claim 35. Therefore, claims 37 & 39 is rejected on the same grounds as claim 35.

5. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Koga '711 and Kanemitsu '603 as applied to claim 1 above, and further in view of Bearss et al. (US 5,987,221 hereinafter Bearss '221).

Regarding claim 7; Koga '711 as modified does not expressly disclose where the dithering process comprises a sampling mode dithering.

Bearss '221 discloses where the dithering process comprises a sampling mode dithering (Fig. 2 is a "FIG. 2 is a block diagram of a threshold dither matrix. The orphan placement may also vary given a different size window, such as for a 5x5 area window, a 1x3 area window, or for a multiple sampling/detection window configuration. See Column 4, lines 23-24 and Column 6, lines 42-47).

Koga '711 and Bearss are combinable because they are from same field of endeavor of an image processing apparatus ("This invention relates in general to imaging systems..." Bearss '221 at Column 1, lines 6-9).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the image processing apparatus as taught by Koga '711 by adding where the dithering process comprises a sampling mode dithering as taught by Bearss. The motivation for

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doing so would have been because this would improve the rendering of complex images embodying text, line art and/or halftone data. Therefore, it would have been obvious to combine Koga '711 and Bearss to obtain the invention as specified in claim 5.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARCUS T. RILEY whose telephone number is (571)270-1581. The examiner can normally be reached on Monday - Friday, 7:30-5:00, est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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